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Chronic Diseases

A CRITICAL ISSUE FOR IOWA

A report on Chronic Care Issues in Iowa as commissioned by the Iowa Department of Public Health

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Executive Summary:

The prevalence of chronic disease is shaping the health care future of Iowa and its citizens. This paper profiles chronic disease in Iowa, examines responsible yet limited initiatives to mitigate chronic disease progression and provides a series of recommended key actions to address this quiet yet dramatic public health issue.

In 2004, health care spending growth in the United States was projected at 7.5%, for a total of $1.8 trillion. The U.S. spends 15.4% of its Gross Domestic Product (GDP) on health care, more than any other industrialized country.[1] Chronic care accounts for over 75% of health care expenditures.[2] U.S. citizen's out-of-pocket expenses for health care rose 26% between 1995 and 2001[3] and is projected to grow 6.7% in 2004.[4] The uninsured, with multiple chronic conditions, pay more out-of-pocket than the insured, and often receive less care.[5]

One hundred million Americans suffer from chronic diseases, and in the Medicare population, 20% have five or more chronic conditions. These beneficiaries account for 66% of Medicare spending. Over 60% of the adult Medicaid population suffers from chronic diseases. [6] Sixty-five percent of Medicaid spending is for the elderly and the disabled.[7]

The impact of chronic conditions on Iowans is considerable. Three chronic conditions, congestive heart failure (CHF), diabetes, and asthma, are commonly targeted for disease management programs. Eleven percent of Iowa Medicare beneficiaries or 53,057 have been diagnosed with CHF. According to the 2003 Iowa Behavioral Risk Factor Surveillance Survey (BRFSS), the prevalance of diabetes has increased 25% during the last five years, and there were 149,000 Iowans with diabetes as of 2001. About 200,000 Iowans have asthma, including 40,000-50,000 children. In 2003, hospitalization and outpatient charges for these three chronic diseases collectively were $216.4 million, with 70% being covered by Medicare, 7% by Medicaid, 20% by commercial insurance and 3% by self-pay. As many of these conditions have associated co-morbid chronic diseases, this paper will explore the implications of multi-disease costs, and opportunities for better care coordination. Iowa's most vulnerable populations, children, the elderly, those in minority populations, of low socio-economic status, and those without health insurance, are at most risk for personal loss and cost due to chronic and disabling conditions. These populations could benefit most from structured disease management programs that provide increased quality of care, and reduce halth care cost spikes.

The currently fragmented heath care system, designed to react to and deliver care for acute illness and injury, is poorly equipped to support healthful living for those with chronic conditions. These issues can be addressed by supporting efforts that improve the care of Iowa's citizens with chronic diseases, and promoting and encouraging patients to take responsibility for self-management. There are seeds of innovation, as several physician clinics, (Iowa Health Physicians Clinics and Mercy Clinics) professional associations (Iowa Academy of Family Physicians in partnership with Child Health Specialty Clinics) and federally funded Community Health Centers (CHCs), have adopted and integrated either the Chronic Care Model, or the Medical Home Model (which utilizes the Chronic Care Model). These programs, through the utilization of evidence-based protocols, self-management support groups, and clinical reminder systems, have shown successes in the areas of improving clinical outcomes, and are met with high patient satisfaction.

However, there are significant barriers that relate to both the "spread" of these programs, and limited their ability, through risk prediction and stratification, to take costs out of the health care system. According to the Agency for Healthcare Quality and Research (AHQR), 20% of the population utilizes 80% of the healthcare resources. Iowa's health insurance vendors are addressing a large portion of their high cost populations by contracting with commercial disease management vendors. These companies manage large populations, but target high cost members for care coordination. They reduce the health care costs to insurance



companies by identifying high cost/high risk members through risk stratification and claims data, and use predictive modeling to proactively manage those most likely to incur emergency department visits and hospitalizations. Disease management companies profit from charging the insurance company a monthly per member fee. However, it is the belief of many that the primary care physician is often excluded in the care management process, thus this model causes further fragmentation to Iowa's health care system.

As Iowa faces a significant budget shortfall in the Medicaid program as well as a rise in the number of uninsured, there is great opportunity to evaluate how population disease management, as organized through Iowa's provider systems, may improve quality and potential cost savings within these populations. Iowa has the opportunity to collaborate with other states who have successfully developed, through a "build or buy" approach, programs that support primarily Medicaid, but also other vulnerable populations.

There is some urgency in addressing this issue. The Centers for Medicare & Medicaid Services (CMS) has issued and awarded a series of population disease management demonstration projects that will explore new ways of caring for patients with chronic diseases. All nine of the Chronic Care Improvement Program (CCIP) demonstrations were awarded to proprietary disease management companies. These demonstrations will explore the ability of disease management programs to 1) improve patient quality with high patient satisfaction, 2) improve clinical indicators, and 3) save the health care system a minimum of 5%, despite the costs associated with running disease management programs. The outcomes of these projects will likely shape the future reimbursement models for both Medicare and Medicaid programs.

This paper outlines Iowa's strengths and challenges in addressing multi-disease chronic care issues and promotes the adoption of the Chronic Care Model as a base strategy to improve provider capacity in managing chronic conditions. It builds the case for a statewide disease management program that will support Iowa's citizens who are enrolled in government health programs. It will be used by the Iowa National Governor's Association (NGA) Chronic Care Team as a tool to communicate proactive approaches. It supports the compelling need to utilize patient centered, provider driven strategies along with population health programs, to maximize sustainability of high quality and cost efficient chronic care in Iowa.

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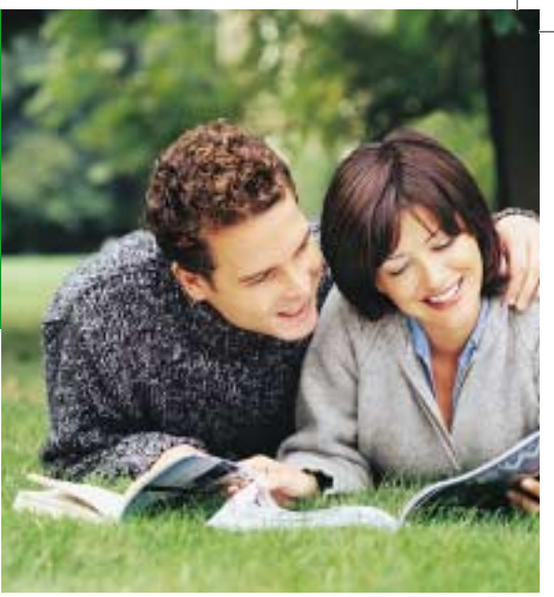
Iowa's need for chronic care strategies



A statewide strategy to meet the healthcare needs of Iowa citizens with chronic illnesses is a high programmatic and policy priority for several reasons.

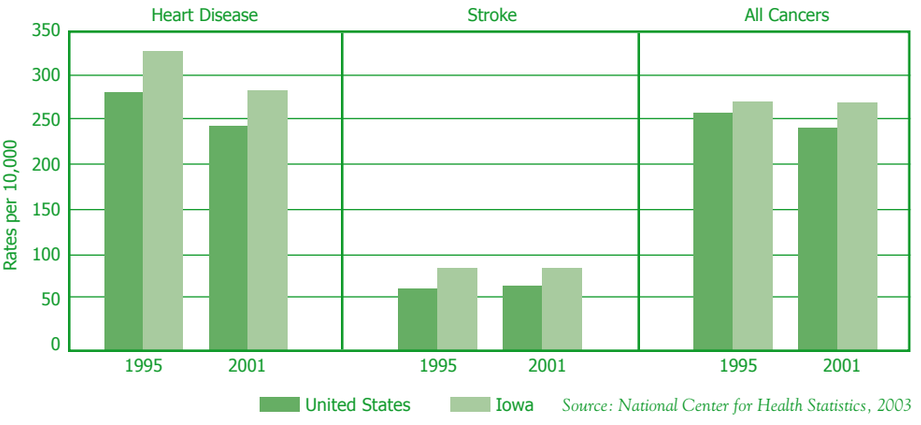
Iowa is facing challenges in its efforts to combat chronic diseases. The three top chronic diseases, heart disease, cancer, and stroke, are the leading causes of death in Iowa, representing 60.4 percent of total deaths in 2002. Iowa is a largely rural state with a stable population that is aging. By 2020 the population is projected to grow by 4% with the over 65 population growth projected at 37%. The CDC Department of Health and Human Services (DHHS) 2003 State Health Profiles indicate that 19.91% of Iowans are over 60 years of age. Iowa ranks first in the nation of percentage of persons over age 85, (1.99%); second in the nation in persons over 75, (7.17%); third in the nation of percentage of persons over 65, (15.35%); and fourth in the nation of percentage of persons over 60 years of age. The incidence of chronic disease increases significantly with age.

Chronic care issues, however, are not limited to the elderly population. Some conditions, such as diabetes, are more prevalent in the 18-64 age group. Allergies/asthma and behavioral/emotional problems were the most common chronic conditions of Iowa Children with Special Health care needs (CSHCN). Children are an important segment of Iowa's most vulnerable populations. According to the 2000 Iowa Child and Family Household Survey, 17% of Iowa's children were identified as having a special health care need.[9] In a national study evaluating health care utilization and expenditures for children with special health care needs, it is noted that compared with other children, those with special needs had three times higher health care expenditures.[10]

A statewide strategy to meet the healthcare needs of Iowa citizens with chronic illnesses is a high programmatic and policy priority for several reasons. First, the incidence of chronic disease increases significantly with age. Further, with Iowa's rural demographics, coupled with a lack of primary care physicians evidenced by 10 of 99 whole and 50 of 99 partial counties designated by Health Resources and Services Administration (HRSA) as medically underserved (IDPH, 2004), distance creates a barrier to timely intervention for health care needs. Finally, even though Iowa has been given a high quality rank on Medicare Quality Indicators[11], it is strapped with proportionately poor reimbursement rates. Iowa is ranked 47th in comparison to other states in it's Medicare reimbursement. There is minimal to no margin for health care providers to reform the system to better care for chronic conditions.

Iowa's burden from chronic diseases is considerable. The leading causes of death reflect the chronic diseases

Chronic Disease: The Leading Causes of Death in Iowa



Source: National Center for Health Statistics, 2003

of cardiovascular disease and cancer. While the death rate from heart disease has been steadily decreasing, Iowa death rates from stroke and cancer are largely unchanged from 1995 to 2001. There is much opportunity to change these trends.

These diseases are largely preventable, as the underlying morphology is both directly or indirectly affected by risk factors such as smoking, unhealthful nutritional habits, and sedentary lifestyle.[12] The rate of overweight and obesity in Iowans is increasing at an alarming rates. These risk factors are on the rise in our children as well. According to Kelly Brownell, director of the Yale Center for Eating and Weight Disorders, health experts question if our current generation of youth may be the first to show an actual decrease in lifespan if these risks are not reduced.[13]

Iowa vs. National Adult Cardiovascular Risk Factors

Risk Factor	Iowa - CY 2002	United States - CY 2002 (Including District of Columbia and Puerto Rico) % = median percent unless otherwise noted
Hypertension, either taking antihypertensive medication or having elevated systolic pressure of at least 140 mmHg or diastolic pressure of at least 90 mmHg	24.9%	25.6% of population, 1999-2000 (age adjusted to 2000 population)
Cholesterol, defined as greater than or equal to 240 mg/dL	33.2%	30.2%
Diabetes, diagnosed	6.5%	6.7%
Overweight, body mass index between 25.0 and 29.9	38.3%	37.0%
Obesity, body mass index $\geq$ 30	22.9%	22.1%
Tobacco, current smokers (smoke some days or every day)	23.2%	23.0%
No Physical Leisure Time Activity	21.8%	24.4%

Source: Iowa: Iowa Behavior Risk Factor Surveillance System, (BRFSS) 2002.

National: CDC, 2003

Strategies to Reduce Risk Factors: The role of individual, population and government strategies.

Individual Responsibility:

In addressing Iowa's leading causes of death and underlying risk factors, it is important to emphasize the responsibility that each individual has toward reducing their risk, and ultimately chronic disease. While there is typically emphasis on providers, health plans, and government programs to provide medical or educational support, it is ultimately individual responsibility that offers the greatest potential to reverse the trends. A key component to risk reduction is individual behavior change. This is a complex issue, as individuals have unique preferences that influence their "perceived risk" to the development of chronic disease. Their motivation to change is dependent on a number of factors, including how averse they are to these risks versus the competing choices of lifestyle.[14] In other cases, lack of behavior change may stem from lack of understanding. Using an example of high readmission rates for persons with congestive heart failure (CHF), one study found that 29% of preventable admissions were from medication noncompliance, 34% from dietary noncompliance, and 37% from failure to seek medical attention. [15] In order to assist patients to better manage their health, it would be important to assess not only their individual understanding of dietary instruction, reportable symptoms, and medications, but also their "perceived risk" of loss of health if they chose to deviate from recommendations. In addition, interventions can be built around a "readiness to change" assessment, which surveys the participants willingness and preparedness to consider lifestyle changes.

Population Strategies:

Other strategies to impact risk reduction occur at the population level. These strategies focus on environmental changes that encourage healthful behaviors at a community level. There are many positive prevention programs that are operational in Iowa. Some, such as "Lighten Up Iowa" have been nationally recognized and replicated. The Wellmark Foundation, local to Iowa and South Dakota, has aligned it's granting opportunities to support community and prevention programs that target the chronic conditions as determined by the Institute of Medicine's priority conditions.

Governmental Strategies:

Yet another strategy for health prevention and risk reduction involves government and legislation. Health risks associated with tobacco and alcohol use are reduced most effectively through environmental policy change. Examples of this are policy changes that support smoke-free workplace ordinances. The landmark study of Helena Montana (2001) highlights a dramatic 40% countywide reduction in heart attacks within 6 months after a comprehensive smoke-free workplace ordinance was passed[16].

Chronic care management opportunities in Iowa

Current trends in behavioral risk factors, Iowa's aging population, and our current budgetary shortfalls set the stage for an escalating health care crisis in our state.

The current health care system, designed to react to and deliver care for acute illness and injury, is poorly equipped to support healthful living for those with chronic diseases.

A chronic disease is defined as having one or more of the following characteristics:

- It is permanent
- It is progressive if unmanaged
- It is caused by non-reversible pathological alteration
- It requires special training of the patient for rehabilitation, self-monitoring, and self-management
- It may require a long period of supervision, observation, or care.[17]

Chronic diseases, once diagnosed, can also be managed to decrease both disability and health care costs. Certain chronic conditions are often targeted for focused disease management programs, due to the opportunity for immediate benefit for the patient, and positive clinical, quality, and financial outcomes. However, as chronic conditions frequently include co-morbidities (additional chronic health problems), chronic care management is expanding to include multi-disease approaches. Nationally, in the Medicare population, 20% have five or more chronic conditions. These beneficiaries account for 66% of Medicare spending. [18]

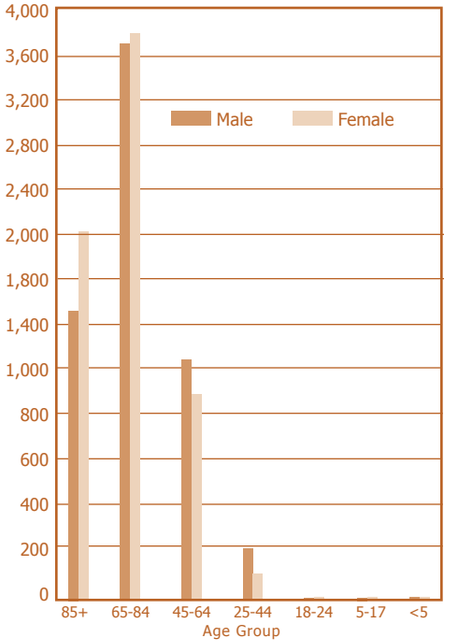
In December 2004, Iowa representatives from state government, accompanied by several legislators and community leaders, known as the Iowa National Governor's Association (NGA) Chronic Care Team, participated (along with six other states) in a Policy Academy on Chronic Disease Prevention and Management, supported by the National Governor's Association. One outcome of the Policy Academy meeting resulted in the formation of a statewide plan for chronic care management. As a first step, the Iowa NGA Chronic Care Team prescribed the preparation of this paper to examine chronic disease and proactive chronic care initiatives, including the description of The Chronic Care Model, as developed by Dr. Edward Wagner. As a second step, the team recommended that the three chronic conditions of congestive heart failure, diabetes, and asthma become priority targets for Iowa. They were able to draw on the experiences and resources of states who had already developed statewide programs, and who worked with these same chronic disease populations. All three conditions have well established evidence-based treatment protocols, self-management education support materials, and care management programs that have shown positive trends in both quality improvement and potential for cost containment.

Congestive Heart Failure (CHF):

Centers for Medicare & Medicaid Services (CMS) statistics indicate that of Iowa's 482,340 Medicare fee-for-service beneficiaries, 11%, or 53,057 have diagnosed CHF.[19] In 2003, Iowa hospitals reported 10,148 hospital inpatient stays for persons admitted for the primary diagnosis of CHF. Eighty-five percent of the inpatients were older than 65 years of age, and 79 percent of outpatients were older than 65, making this a condition of primarily senior citizens.

Since CHF is so prevalent in the elderly, there are often one or more additional chronic conditions, such as cardiovascular disease, diabetes, hypertension, or elevated cholesterol that must also be managed. In 2003, Pneumonia was the most common secondary diagnosis for those who were hospitalized.

CHF - In and Outpatient



Source: Iowa Hospital Association
2003- Inpatient and Out-patient (ER, OP Surgery, and Observation visits) Discharge Data
ICD-9 CM Codes: 402.01, 402.11, 402.91, 404.01, 404.03, 404.11, 404.13, 404.91, 404.93, 428

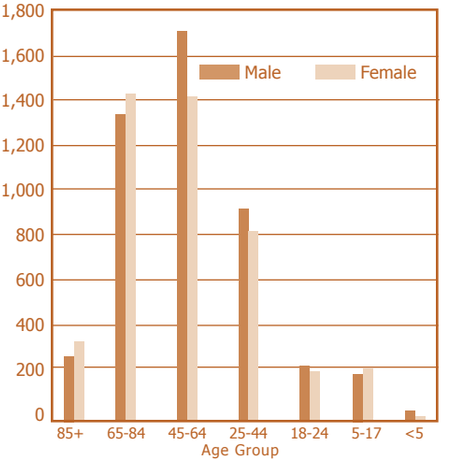
Diabetes:

According to the national compilation of the 2001 BRFSS report, there were 149,440 people with diagnosed diabetes in Iowa. According to 2003 Iowa BRFSS data, the rate for diabetes has increased 25% during the last five years. Diabetes is the primary diagnosis of over one-third of the 500-600 new cases of blindness.[20]

In 2003, there were 3,629 inpatient and 5,556 outpatient visits for patients with a primary diagnosis of diabetes. If diabetes is tracked as either a primary or secondary diagnosis, the number of visits jumps to 12,062 and 23,856 visits respectively. Diabetes is a condition of many co-morbid conditions, and its incidence and prevalence is very difficult to quantify as persons often present with cardiovascular, kidney or circulatory complications rather than blood sugar abnormalities. Indeed, for many older diabetics, the initial diagnosis of diabetes is made during their first hospitalization for heart problems.

The age distribution for diabetes is far different than that of CHF. The majority of patients (57% of inpatients and 58% of outpatients) fall into the 18-64 age group, or working age category. Seniors accounted for 36% of inpatient visits, and 38% of outpatients. Due to the high prevalence in the 18-64 age group, diabetes is highly targeted for private health plan disease management programs.

Diabetes - In and Outpatient



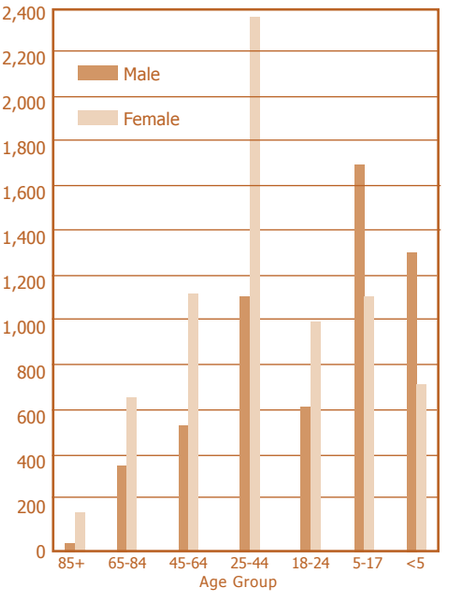
Source: Iowa Hospital Association
2003 In-patient and Out-patient (ER, OP surgery, Observation/ Discharge Data
ICD-9 CM Code 250

Asthma:

Asthma is the most prevalent chronic condition of childhood and the fourth most prevalent chronic condition of adults. About 200,000 Iowans have asthma, including 40,000-50,000 children.[21] Adults of low income (income of less than $25,000) are about 2.5 times more likely to report having asthma than are adults with household income of more than $75,000 (BRFSS 1999-2000), Overall adult rates of asthma are lower in Iowa than in the U.S, except for those with a less than high school education, which was 30% higher than national rates.

In 2003, 2,498 persons were hospitalized with asthma as a primary diagnosis and 5,451 persons with either primary or secondary diagnosis. Outpatient visits totaled 10,584 for asthma as primary diagnosis and 18,473 as a primary or secondary diagnosis. As with diabetes, hospitalizations and outpatient visits were more prevalent in the 18-64 group (45% and 55%), but youth visits accounted for a significant 30% and 39% respectively, followed by seniors at 24% for inpatient visits. Outpatient visits for seniors was quite low at 5%.

Asthma - In and Outpatient



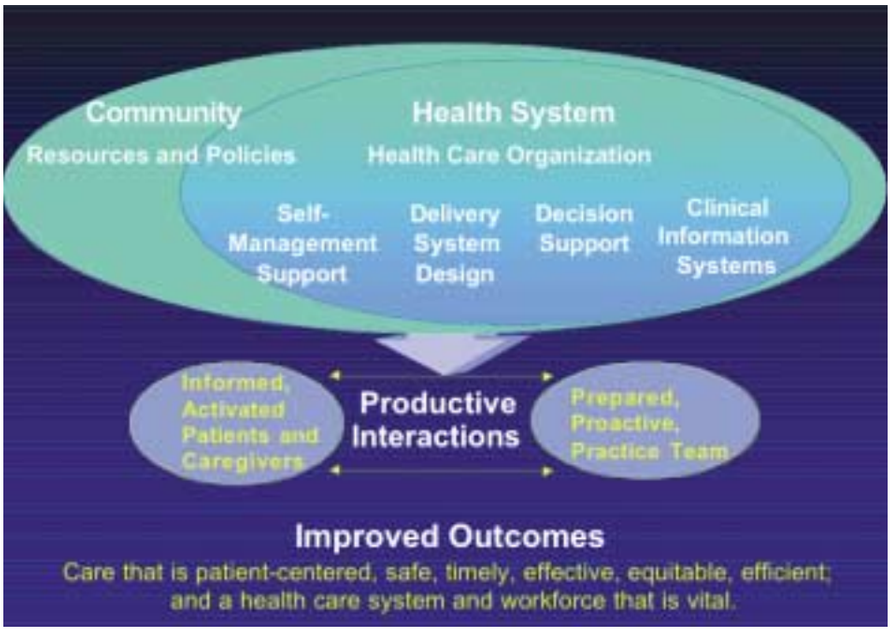
Source: Iowa Hospital Association
2003 In-patient and Out-patient (ER, OP surgery, Observation) Discharge Data
ICD-9 CM Codes 493

The Chronic Care Model

Recent studies of U.S. health care services have uncovered disturbing shortfalls in quality of care.

In 2001, the Institute of Medicine (IOM) published the first of three reports that would become guiding documents to multiple organizations who desired to transform the health care system and improve quality of care. A considerable focus for determining "health care priorities" dealt with improving care for patients with chronic diseases. A key model in addressing these needs, as presented in IOM's Priority Areas for National Action, was the incorporation of the Chronic Care Model throughout health systems. The Chronic Care Model addresses six essential elements that place the patient as the center of their health care plan, and assists the patient and health care system to better coordinate care through preventative, acute, and long term services. The six elements include the following:

The Chronic Care Model



[Official Chronic Care Model Graphic] [22]
Source: Effective Clinical Practice 1998;1:2-4.

Community

Community resources abound with supportive programs and partnerships that help build healthy communities. Examples include: senior center programs, community cardiac rehab classes, asthma support groups, community diabetes education seminars, exercise clubs, nutrition classes, and community health screenings. This element invites rich opportunity for proactive health environmental policy efforts, such as smoke-free environments, walkable, safe communities, safe neighborhoods, and fast food nutrition dissemination.

Health System

Health care organizations play a key role in transforming health care from a reactive to a proactive role for persons with chronic diseases. Health systems can most effectively improve care through prioritizing quality improvement goals in the areas of patient safety, improving care coordination through the entire healthcare system, and developing databases that are easily accessible to all providers as patients navigate through the system.

Self–Management Support

In order for chronic care strategies to be successful, the patient must be the central focus. Despite all efforts to educate and "enlighten" patients to modify unhealthful lifestyle behaviors and follow hospital and health clinic instructions, the compliance for patient follow-through is generally dismal. While there are many contributing factors, the adherence to recommended medical follow-up can be enhanced through self-management support strategies. While this is a time consuming process, the patient is ultimately empowered to take individual responsibility for their day-to-day health care decisions.

Delivery System Design

A pro-active, structured program by healthcare teams promotes patient health and wellness, versus treating illness. Delivery systems must build in evidence-based care that is responsive to individual patient need, be it regular follow-up, or case management for those with complex diseases and co-morbidities. Within this element, optimal patient support includes consideration for both cultural background and health literacy issues.

Decision Support

Decision support involves building evidence-based practice guidelines into daily practice, and educating patients and families about those guidelines, so that they are prepared to be an active participant in their care decisions. In addition, decision support promotes communication and integration of treatment and follow-up plans between specialists and primary care physicians.

Clinical Information Systems

Clinical information systems are at the hub of identifying a potential population and coordinating care. Patient-specific data is utilized to help identify and then stratify patients for appropriate levels of care, to provide clinical patient information to all healthcare professionals who are interacting with the patient, to trend health status, and to monitor patient and clinical quality performance outcomes. Patient registries are often used in physician clinics to remind health care staff to schedule pertinent labs, follow-up exams, or check on patient goals.

The Chronic Care Model is focused on improving care that is provided to the patient by the primary physician and healthcare team. It is a useful model, not only for managing chronic diseases, but also for providing preventive, acute and palliative care.

Iowa's chronic care/disease management initiatives

The Vision of Iowa's Chronic Care Initiative, as developed by the NGA Chronic Care Team, is to be a state committed to health promotion, prevention, and chronic disease management.

In order to achieve this, key changes will need to be made.

- Patients, through health coaching and support, must recognize the significance of individual responsibility in their health outcomes.
- Providers must deliver consistent and proactive high quality care that improves health status, enhances quality of life, and teaches self-management skills.
- Payers must work with providers to support an outcome-based practice that rewards physicians for meeting quality and clinical goals.
- Health systems must reorganize to better meet the needs of patients with chronic disease, supporting them through all levels of care.
- Costs associated with providing health care to the chronically ill must be contained.
- Iowa's providers must be supported in their efforts to adopt the chronic care model into their practices in a meaningful way.

The goal of the statewide Chronic Care Initiative is to build Iowa's capacity to deliver effective, patient-centered, and proactive chronic care. This is possible by transforming what is currently a reactive health care system into one that keeps Iowans as healthy and productive through self-management, proactive planning and evidence-based strategies.

Providers & Organizations:

There are a number of Iowa chronic care initiatives that are currently in operation at this time. Examples are listed below:

Please read about three sucessful "Early Adopter Stories" on page 26-28

Providers & Organizations:

Iowa Medical Home Initiative

A partnership of Child Health Specialty Clinics and Iowa Academy of Family Physicians

- **Program:** The Medical Home Model/Chronic Care Model.
  18 clinics are operational in use of the model.
- **Metrics measured/numbers served:** Process outcomes monitor office infrastructure changes to align with the model. Will soon be developing clinical and financial outcomes.
- **Contact information:**
  Jeffrey Lobas, M.D. , Professor and Director Child Health Specialty Clinics
  319-356-3715 / Jeffrey-lobas@uiowa.edu

  Susie Kell, Executive Vice President, Iowa Academy of Family Physicians
  800-283-9370 / susiekell@iaafp.org

Iowa Academy of Family Physicians

- **Program: Chronic Care Model** 2 clinics/one Iowa and one South Dakota are operational in the use of the model, focusing on prevention.
- **Metrics measured/numbers served:** Preventative screenings for colo/rectal cancer, prostate cancer, osteoporosis, hyperlipidemia. Expansion goals include screenings for breast cancer and depression.
  There are 384 patients in registry as of mid-2004.
- **Contact information:**
  Susie Kell, Executive Vice President, Iowa Academy of Family Physicians
  800-283-9370 / susiekell@iaafp.org
  Funding for the Academy's IHI IMPACT membership was provided by the Wellmark Foundation

Providers & Organizations Con't:

Iowa Health Physicians Clinics (See Early Adopter Story on page 27)

- **Program:** Chronic Care Model, Target: diabetic patients, expanding to hypertension, depression, lipids, and childhood asthma.
  Expanding to 7 additional sites
- **Metrics measured/numbers served:** Average Hb A1c levels for all diabetic patients.
- **Contact information:**
  Mark Barnhill, D.O. , Medical Director, Iowa Health Physicians Clinics
  515-471-9200

Mercy Hospital Clinics (See Early Adopter Story on page 26)

- **Program:** Chronic Care Model, Target: diabetic patients. Expanding to hypertensive patients. *Operational in 4 clinics*

  Metrics measured/numbers served: HbA1c, LDL cholesterol, MicAlb, and Blood Pressure, adherence to completing annual lab.
  2,242 patients in registry in 2004.
- **Contact information:**
  David Swieskowski, M.D., Vice President, Quality Improvement
  Mercy Clinics
  dswieskowski@mercydesmoines.org

Iowa Medicaid Program

- **Programs:**
  – Disease Management,- Target: diabetic patients in pilot, expanding to Asthma patients. Goal is increasing provider and recipient knowledge of accepted practice guidelines

  – Case Management- Target: high cost patients, expanding to high service utilization patients
- **Metrics measured/numbers served:**
  – Disease Management: HbA1c levels
  100 patients in pilot
  – Case management: cost savings
- **Contact Information:**
  Gene Gessow, Director, Iowa Medicaid Enterprise
  515-725-1121 / egessow@dhs.state.ia.us

  Thomas Kline, D.O., Medical Director, Iowa Medicaid Enterprise
  515-725-1297 / tkline@dhs.state.ia.us

Iowa Chronic Care Consortium (ICCC) (See Early Adopter Story on page 28)

A collaboration of public, private, academic, and governmental participants.

- **Program:** Case Management/Telemanagement
  Target: CHF and Diabetic patients. Comparison of three different models utilizing telephonic or internet-based monitoring.
- **Metrics measured/numbers served:** Clinical improvement, Patient satisfaction, patient functionality, cost savings, decreased hospital re-admissions

  1.) 569 patients enrolled in 10 sites utilizing the Pharos Innovations, LLC , telemanagement system.

  2.) 10 patients with CHF enrolled in Home Health project utilizing HomMed telehealth monitors.

  3.) 50 diabetic patients enrolled in a web-based care management project.
- **Contact Information:**
  William Appelgate, Ph.D., ICCC Executive Director
  515-271-1516 / william.appelgate@dmu.edu

  David Hickman, Director, Clinical Integration Mercy Health Network
  515-643-5330 / hickmand@mercyhealth.com

  Sal Bognanni, Director, Clinical Process Improvement , Iowa Health System
  515-241-4065 / bognans2@ihs.org

  Funding for this demonstration project provided by HRSA Office for the Advancement of Telehealth, State of Iowa, Mercy Health Network, and the ICCC.

Avera-McKennan Health System

- **Program:** CMS Demonstration project, target: CHF patients
- **Metrics measured/numbers served:** Medicare claims reduction, patient satisfaction
  700 patients enrolled
- **Contact Information:**
  Julie Fieldsend, RN, Manager, Disease Management
  Avera-McKennan Hospital and University Health Center
  605-322-6575 / Julie.Fieldsend@McKennan.org

Federally Qualified Health Centers (Community Health Centers)

- **Programs:**

  – Chronic Care Model/ Learning Model/ Improvement Model
  Health Disparities Collaboratives with 5 of 8 centers currently participating in one or more chronic disease collaboratives.

  – Diabetes Intervention Initiative
  Focuses on the value of exercise to control diabetes.
- **Metrics measured/numbers served:**

  – Chronic Care/learning/improvement Model: Core national measures. Registry sizes are tracked for each of 5 chronic diseases (diabetes, asthma, cancer, depression, cardiovascular disease).

  – Diabetes Intervention Initiative: HgA1c, blood pressure, weight
  82 patients enrolled
- **Contact Information:**
  Deb Kazmerzak, Clinical Program Manager
  Iowa/Nebraska Primary Care Assoc.
  515-244- 9610/ lanepcadkazmerza@aol.com

Wellmark's Recognize and Reward Best Practice

- **Program:** Collaborative project with more than 100 primary care physicians in Cedar Rapids and Des Moines, focused on the proactive management of chronically ill patients.
- **Metrics measured/numbers served:** Both claims-based and clinical measurements of standard chronic care measures like Hb A1c and pharmacy targets.
- **Contact Information:** Dale Andringa, MD, Chief Medical Officer, Wellmark Blue Cross and Blue Shield 515-245-5056

Barriers to widespread adoption of the chronic care model

The programs represent Iowa's progress toward implementation of the model, but limitations have been identified in many areas.

While these programs represent Iowa's progress toward implementation of the Chronic Care Model, literally all have identified a number of challenges to either the implementation of the model, the financial and human resources limitations in expanding to additional locations, or the ability to track longitudinal data that addresses health care utilization across the health care system. These barriers and challenges can be grouped into four levels: National, Health System, Provider, and Patient.

Barriers at the National Level:

1. Policy regarding caring for the full spectrum of acute and chronic care must be more consistent. Currently, separate policy authority exists for Medicare, Medicaid, and Veterans Administration, etc. Differing policies at the federal, state, and local level make it difficult to implement innovative efforts to integrate care. This can also occur within the insurance industry.

2. Administrative procedures between Medicare, Medicaid, and private insurance promote cost shifting, versus gaining cumulative benefits of more efficient services through integration.

Health System Barriers:

1. Lack of a reimbursement system that aligns financial payment with integrative care that supports patients through preventative, acute and long term care as needed. Hospital systems tend to have a mixed response to disease management. Successful disease management programs can dramatically decrease both ER visits and hospital admissions. In some cases, this reduces overcrowding of ER departments and hospital beds, and results in cost savings as chronic care expenditures may exceed reimbursement. However, particularly with Iowa's critical access hospitals, these programs may be seen as a threat to their bottom line. Most Iowa hospitals and health systems that embrace disease management efforts are doing so out of quality care initiatives, or are targeting the chronic diseases that are high cost to their system.

2. Provider Networks must be integrated to provide comprehensive care. Information systems must integrate information regarding patients, their diseases, cost of those services, and outcomes. Cost savings risks must be shared equitably among providers and reward incentives built into the process. Chronic care program administration needs to cross between acute and long-term settings.

Provider Barriers:

1. Providers must be supported to implement The Chronic Care Model in their individual office settings. Barriers to successfully doing so include:

a. Lack of reimbursement for certain components of chronic care, primarily the ancillary health care providers, and patient self-management support programs.

b. Lack of resources and technical assistance to implement components of the Chronic Care Model. Providers interviewed for this paper benefited

from the support and participation in the Institute for Healthcare Improvement (IHI) IMPACT projects, but the majority of Iowa providers would not have access to this resource.

2. Providers will need assistance to develop clinical information data systems. Clinical data systems allow for development of patient registries, identification of subpopulations that need more proactive care, and prediction of patients that will be high cost utilizers within the next year. Careful care coordination of this small group will achieve the greatest cost savings. Data systems can also provide performance monitoring to assist physicians in evaluating the clinical outcomes of their patients, and allow for outcome comparisons between different physician practices.

Patient Barriers:

A defining difference in providing chronic care versus acute care is that the Chronic Care Model is "patient-centric" versus "disease focused." The treatment outcomes are aimed at improving the quality of life and productivity versus being curative. Therefore, the patient's role in "owning" their contribution to their health management is a primary factor in the success of the outcome. There are barriers in the existing system that discourage patients and caregivers from being more directly involved in their care.

1. Patients and caregivers must be more informed about the costs, consequences and process of delivering chronic care. Often, patients are unaware of what costs will be covered through insurance. Across the spectrum, policy makers, providers, and consumers must change their mindset from a short-term to a long-term focus.

2. Patient education and support must be delivered at times when it is most likely to be accepted and understood, i.e., at onset of diagnosis, or after a recent health event. Health literacy and cultural influences must be incorporated. Self-management support must be individualized to meet patient needs.

3. Patients must be empowered to make informed daily decisions about their health management. Most decisions that affect chronic care are dependent on "daily living decisions", such as taking medications as prescribed, eating healthier foods, and exercising regularly. These behaviors must be seen as an integral part of their treatment, versus being a "diet" or "weight loss" program.

The Chronic Care Model is a fundamental evidence-based strategy that can improve quality of care throughout health care systems in Iowa. However, due to the significance of these multi-level challenges, it becomes difficult to obtain quantifiable outcomes that would motivate changes in the current governmental or private reimbursement system. Lack of integration support and reimbursement limits the use of the Chronic Care Model as the only chronic care strategy for Iowa. However, coupled with a population health strategy, the Chronic Care Model serves as an exemplary approach to improving health care quality, and promotes the physician-patient relationship.

Population Disease Management Strategies

If CMS Disease Management Demonstrations became widely adopted, Iowa providers will need to be prepared to operate on a very different model of healthcare delivery.

Population strategies are utilized to manage entire populations of participants, versus individuals. The ultimate goal is to reduce illness and health care utilization of the entire population. Primary endpoints of these programs are increased healthcare quality to all (through the use of evidence-based practice and prevention guidelines), high patient satisfaction (due to the large emphasis on prevention and self-management), improved clinical indicators (lowered cholesterol, blood pressure, etc.), and reduced health care utilization (hospitalizations) for all those enrolled. In the population model, all targeted persons (such as all persons with a diagnosis of diabetes) are considered enrolled unless they "opt out" of the program. The cornerstone of population strategies are "sorting" of an entire population into risk categories through risk stratification, and predicting the ones that will likely have high illness exacerbations. While the entire population is followed and receives education and medical support, the high risk group, usually not more than ten percent of the population, receives intensive care management to move their healthcare utilization from hospitalizations and emergency visits, to physician offices and ultimately to effective self-management.

The Centers for Medicare & Medicaid Services (CMS) have recently launched a number of demonstration projects to explore population approaches in delivering quality chronic care.

In addition, on January 31, 2005, CMS announced a new three year performance-based payment project that will reward ten large group physician practices across the nation to improve patient outcomes through better coordination of care for chronically ill and high cost beneficiaries. Private health plans are also beginning to pilot pay-for-performance initiatives that align physician payment to overall population patient outcomes, versus episodic office visits. If these approaches become widely adopted, Iowa providers will need to be prepared to operate in a very different model of health care delivery.

CMS Disease Management Demonstration Projects

In 2004, The Centers for Medicare & Medicaid Services (CMS) announced several demonstration project opportunities that, over the next three years, will test different chronic care strategies to improve the quality of care for patients with chronic diseases. The largest project, the Chronic Care Improvement Program (CCIP) will support nine sites and 90,000-180,000 patients nationwide who are diagnosed with Congestive Heart Failure and/or Diabetes. The outcomes of the programs must show improvements in quality of care, clinical outcomes, patient satisfaction, and an overall five percent reduction in Medicare expenditures over three years.

A smaller scale program, the High-Cost Beneficiaries (CMHCB) demonstration project steers away from "silo" diseases, and recognizes the impact of associated co-morbidities. While CCIP attracted primarily proprietary disease management companies with some local partnerships, The CMCHB demonstration project required the involvement of health care providers and integrated delivery systems. The outcomes for this program are the same as CCIP.

Population Disease Management: What Iowa can learn from other states

Iowa is one of many states that are considering statewide chronic disease management strategies to improve health care quality, and address increasing health care expenditures.

Several states have already adopted models of care and/or disease management programs targeting their Medicaid population. Most have done so more out of cost reduction efforts versus health care reform, but their vision is expanding with time to include more complex health care challenges. All have adopted population strategies, with enrollments of 347,000 to 1.2 million, and several, such as Indiana and Washington, are also incorporating the Chronic Care Model, and case management.

The Iowa NGA Chronic Care Team has joined with participants from Alaska, Louisiana, Maine, Pennsylvania, Rhode Island, and Vermont, as selected participants in the NGA Policy Academy on Chronic Disease Prevention and Management. They learned from states, such as Indiana, North Carolina and Washington, where successful chronic disease management programs have been implemented. In some of these states, population disease management is outsourced through commercial disease management companies, primarily because of the resource intensive process of "building" a program and pressure to show cost savings within a tight timeframe.

In September 2004, the Kaiser Foundation published a report overviewing nine states that have implemented disease management programs for their Medicaid populations. Key findings included:

- Initial savings and quality results from stand-alone disease management programs are promising, but by no means conclusive.
- States are having a hard time reaching potential enrollees, and participation in the programs is voluntary, with variable levels of participation.
- Issues of enrollee turnover and low payment rates hamper potential scope and impact of chronic disease initiative.
- If carefully designed, disease management programs can help address underlying health system issues affecting the chronically ill. [23]

Statewide Disease Management (DM) programs for Medicaid

Colorado – 347K enrollees
Target: Asthma & Diabetes
Agent: Care Managers
Outsourced pilot programs- funded by Pharma. Companies

Florida – 2.04M enrollees
Target: Asthma, CHF & Diabetes
Agent: Pharmacists
Run by Pharma. Companies, Auto enrollment with opt out

Indiana – 610K enrollees
Target: Asthma, CHF & Diabetes
Agent: Care Managers
Initially used outside vendor. Have now built own program, using the Chronic Care Model, call center with care coordinators and physician support, case management.

Missouri – 773K enrollees
Target: Asthma, CHF & Diabetes
Agent: Pharmacists/Physicians
Outsource DM. Physician-pharmacist provider teams make 4 visits/year to each patient.

North Carolina – 1.20M enrollees
Target: Asthma & Diabetes
Agent: Physicians and Care Managers
In-state program for PCCM. System of community health networks, organized by physicians, are paid $2.50 per enrollee.

Oregon – 537K enrollees
Target: Asthma, CHF & Diabetes
Agent: Care Managers
DM Outsourced. Fee-for-service enrollees. Individual management by case managers

Washington – 915K enrollees
Target: Asthma, CHF & Diabetes
Agent: Care Managers
Outsourced for DM. Fee-for-Service enrollees. Are also using the Chronic Care Model.

Source: Kaiser Foundation, 2004

As noted on the preceding page, there is a mixture between states that have chosen to "build" versus "buy" their disease management programs. Factors that have influenced the choice to "buy" include: need for rapid cost-reduction outcomes, limited resources to "build" a program, and partners that would support outsourcing costs. Those that chose to "build" were more interested in building capacity in their local health care systems, especially in "saving" the costs of outsourcing in order to "invest" in internal capacity. Most states are evolving toward a combination approach (utilizing both the Chronic Care Model, and a population disease management strategy), in order to improve provider capacity, but also to obtain the skills and tools necessary to predict and stratify the high-risk groups.

Part of the challenge in determining a successful disease management strategy is defining it. The term "disease management" is used loosely, depending on who is delivering the service, and the outcomes that they wish to achieve. Health care providers use the term to describe clinical and patient care strategies that are effective in improving quality of care for patients with a specified condition. Payers and managed care organizations, however, focus more on reducing health care costs through a coordinated set of services using a risk model to incent providers to alter their practice patterns. In response to the wide variances in definition, the Disease Management Association of America (DMAA) developed a consensus definition in 1999. In a press release, published on October 20, 1999, Al Lewis, president of DMAA's Board of Directors stated: "While disease management has emerged as a proven way to improve the health of millions of people with chronic conditions, the definitions and program components continue to vary. Our mission is to ensure that health care payers, providers, and other organizations involved in disease management understand what constitutes a comprehensive program versus what merely are supporting components."

Iowa's health insurers have responded to market demand for reduced health care expenditures by offering a menu of disease management programs to employer groups. Several of these programs have seen positive Return on Investments (ROI), primarily through reduced hospital stays and ER visits. They have largely outsourced these programs to proprietary disease management companies. Traditionally,

Disease Management Definition and Components

Disease Management is a multidisciplinary, continuum-based approach to health care delivery that proactively identifies populations with, or at risk for, established medical conditions that:

- Supports the physician/patient relationship and plan of care
- Emphasizes prevention of exacerbations and complications utilizing cost-effective evidence-based practice guideline and patient empowerment strategies such as self-management education: and
- Continuously evaluates clinical, humanistic, and economic outcomes with the goal of improving overall health

In addition, DMAA recommends that all of the following components be in place in order for a program to be considered a disease management program:

- Population Identification Process
- Evidence-Based Practice Guidelines
- Collaborative practice model to include physician and support-service providers Risk identification and matching of interventions with need
- Patient self-management education (may include primary prevention, behavior modification programs, and compliance/surveillance)
- Process and outcomes measurement, evaluation, and management
- Routine reporting/feedback loop (may include communication with patient, physician, health plan and ancillary providers, and practice profiling)
- Appropriate use of information technology (may include specialized software, data registries, automated decision support tools, and call-back systems)

(Source: Disease Management Association of America)

these programs focus on the primary communication pathways between the member and disease management call center, or care coordinators. Health Network primary care physicians may be sent updates on interventions, protocols or be asked to provide input into program development.

Iowa's health insurers and managed care organizations utilize Health Plan Employer Data and Information Sets (HEDIS) scores to report their effectiveness in delivering clinical quality and customer service. HEDIS is a standardized measurement tool developed and maintained by the National Committee for Quality Assurance (NCQA). HEDIS scores are publicly reported, and are useful to individuals, and employers when making health plan purchasing decisions. They also help guide quality improvement efforts of the plan, and the overall health care system. HEDIS scores are often found on the health plan web sites.

Proprietary Disease Management (DM) Program Components:

Proprietary, or commercial disease management companies often include diabetes, asthma, chronic obstructive pulmonary disease, congestive heart failure, and coronary artery disease within their suite of management options. These conditions have certain characteristics that make them suitable for clinical interventions. They are:

- Once contracted, the disease remains with the patient for the rest of the patient's life.
- The disease is often manageable with a combination of pharmaceutical therapy and lifestyle changes.
- The average cost of some chronic disease patients is sufficiently high to warrant the expenditure of resources by the health plan or employer to manage the condition.[26]

A core component of these DM programs is the data platform. Patient specific data, as derived through health care claims and risk assessments are used to identify, target and stratify patients into levels of pro-active preventative education and care

Iowa Health Plan Disease Management Strategies

Organization	Build or Buy	Populations served	Contact
Wellmark Blue Cross/Blue Shield of Iowa	Buy- Vendor: American Healthways, Inc.	Targeted populations: 5 chronic diseases and 11 impact conditions 60,000 Iowans may be eligible under Wellmark's fully insured health plans.	Cynde Shepherd RN, BS, CCM Team Leader, Population Health Improvement Wellmark Blue Cross Blue Shield 515-245-4674 shepherdcc@wellmark.com
John Deere Health	Build- Has used a variety of Disease Management Vendors in the past.	Targeted populations: 18 chronic diseases. 90% enroll in program. High-cost, high utilization members are case managed	Bruce Steffens, M.D., Sr. Vice President & Chief Medical Officer John Deere Health 309-765-1355 Steffensbrucec@johndeere.com
Principal Life Insurance Company	Buy/build- Vendors: American Healthways, Accordantcare, to manage both "usual" chronic diseases and "rare" chronic diseases. Also provide individual case management as needed.	Targeted populations: A total of 30 chronic conditions plus additional individual high cost conditions	Ray Webster, M.D., Chief Medical Director Principal Life Insurance Company 515-246-7633 webster.ray@principal.com

management. Data allows these programs to predict high cost patients and provide supportive care that will reduce the ER and hospitalization "spikes" in health care costs. This process may bypass the primary care physician (PCP), although the disease management vendor may offer the PCP treatment protocols and patient education materials to use in their office settings. In some programs, the data can be supplemented by the physicians and can also be shared with physicians.

The following options are available to the member who is enrolled in the disease management program:

- A Call Center staffed with nurses to provide education and support.
- Supportive educational materials
- Care coordination
- Pharmacy review
- Telephonic, internet-based, or other biometric devices that assist patients to note early warning signs of health problems and support their self-management skills.

Can Disease Management Programs Produce Cost Savings?

Although DM programs measure a number of program outcomes, most vendors are contracted by health insurance companies and employers who are evaluating the effectiveness of such programs to reduce their employee or member health care expenses. Many programs are able to document positive clinical outcomes (i.e., improvements in clinical lab values, or in medication compliance), but until recently, ROI has been more elusive, for the following reasons:

- There have been a variety of measurement methodologies used to evaluate the financial return of disease management programs. There have been a few preliminary reports using a control group methodology, but more widespread evaluation using this method is necessary to validate the results of the programs with participants as compared to a group not participating in disease management.

American Healthways:

On January 1st, 2005, Wellmark Blue Cross Blue Shield launched a new program to assist its fully ensured health plans to positively impact the health of their employees with disabling chronic diseases. This program is marketed as a premier service as it targets not only members, but seeks to involve physicians within the process of the care management . The program, called BluePrints for Health Disease Management, is built on a proprietary, user-friendly health management system integrated with clinical information, predictive modeling, and telephonic technology. This allows the clinician to view real time data, and interact with members to help them manage their disease, in conjunction with their providers.

A very similar program was introduced by Minnesota Blue Cross Blue Shield in partnership with American Healthways in December 2001. These two organizations signed an industry first, 10-year agreement. BCBS of Minnesota launched the programs across their fully insured and made the programs available for purchase to their self-funded customers. Because of the way that they implemented the programs, they were able to measure their program results by examining two different cohorts, one group who had the new American Healthways programs and the second was a group that continued with the internal disease management programs that BCBS of Minnesota administered. Both cohort groups were continuously enrolled for two years and had approximately 60,000 members (in each group). This design offered an opportunity to do a unique reference group comparison of the benefits obtained from the program. Some of the results are as follows:

- Return on Investment (ROI) for a chronic disease population with high risk, but currently healthy, was $2.90 per dollar spent.
- The first year, average claims savings were estimated at $500 per enrolled when compared to the reference group
- Hospital admissions were reduced by 14%,
- ER admissions were reduced by 18%,
- There was a 2 to 3 percent projected reduction in commercial health care expenditures for its fully insured populations.
- Overall savings were $36 million.
- Benefits to enrollees included: 7 percent of chronic disease members reported decreased days absent from work or school.
- Member satisfaction high-in relation to the program, control over health, preparedness for physician visits. [25]

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• There are a variety of different approaches used in disease management by vendors and other groups who perform disease management. This variety in approaches results in different levels of program "intensity" that can generate different levels of financial return. There are many distorting factors, and biases with this business versus research approach that make it impossible to compare the results against other vendors, or even utilizing the same vendor, but different programs.

• "Regression to the mean" a phenomena that complicates the measurement of disease management programs. It is a natural statistical property of populations. In general, individuals with extreme values one year will tend to move toward the population average the following year.[27] This is one of several measurement challenges that exist today in determining the financial return of programs.

• Not all programs factor in the program intervention costs or internal management costs for the program as a "denominator" to determine true cost savings. Instead, they report only the health care savings.

• Commercial disease management strategies are mostly proprietary, and they do not disclose methods that would enable comparison practices such as "benchmarking."

• Chronic diseases present different levels of opportunity for savings. Some are more immediate, others may take years to determine.

• There is lack of a consistent definition of a "savings measurement." The DMAA is working to provide more industry consistency to measurement, but their efforts are still in the infancy stages.

• The use of unbiased, independent evaluators has historically been rare. Today, it is occurring with greater frequency.

These limitations lead the Director of the Congressional Budget Office (CBO), in a 2002 testimony before the U.S. Senate, to state that "it is not yet clear whether disease management programs can….produce long-term cost savings."[28] A Literature Analysis on Disease Management Programs, produced by the CBO and released on October 13, 2004 examined peer-reviewed studies of disease management programs for specific conditions, as well as a broader review of relevant literature. The cover letter, as written by Douglas Holz-Eakin, Director, states "According to CBO's analysis, there is insufficient evidence to conclude that disease management programs can generally reduce overall health spending. It is important to note that such programs could be worthwhile even if they did not reduce costs, but CBO's analysis focused on the question of whether those programs could pay for themselves." [29] Within a week of this report's release, the Disease Management Association of America (DMAA) hosted a teleconference to address the report and it's findings. According to the follow-up transcript, the chief criticism of the CBO report was that the research reviewed was old, and narrow in focus. Recent studies, which highlight more promising cost reduction outcomes, were not included within the CBO research.[30] In 2003, The American Association of Health Plans/Health Insurance Association of America (AAHP/HIAA) sponsored a survey of Disease Management (DM) programs that followed well-designed research methodology. The survey report focused on eight DM programs that were particularly thorough in their research methodology, and were able to assess positive ROI and quality outcomes for programs that targeted patient populations with asthma, congestive heart failure, low back pain, diabetes and multiple chronic conditions.[31] A 2004 study of 43,000 Cigna members participating in a diabetes disease management program, as published by Health Affairs, revealed improvement in six quality indicators and average cost savings of 5 to 8 percent.[32]

While these outcomes are of high importance to health plans, employers, and the healthcare industry, the challenge remains that DM programs add yet another "layer" in an already complex and fragmented health care system. The primary care physicians and sub specialist may be bypassed or distanced, thereby interfering with the physician to patient communication.

Iowa's business case for a statewide disease management program

Iowa is facing great challenges in healthcare expenditures at the state, corporate and individual level.

Disease management company's profits are derived from being paid a "per member per month" (pmpm) or a "per program participant per month" fee to manage a large population of enrolled members. As described previously, several states are moving to population models as well. However, the deployment of this approach is often combined with health care provider direction in order to match the customized need of the state, and to build capacity within the local health care structure to manage chronic conditions. Many states are seeking ways to keep the profits of disease management efforts within their control, versus losing them to proprietary companies.

To better appreciate the potential impact of such a program, it is important to assess current health care expenditures from a number of viewpoints.

In 2004, health care spending in the United States was up 7.5 percent from 2000. The U.S. spends 15.4% of its Gross Domestic Product (GDP) on health care, more than any other industrialized country.[33] Chronic care accounts for over 75% of health care expenditures.[34] U.S. citizen's out-of-pocket expenses for health care rose 26% between 1995 and 2001.[35] The uninsured, with multiple chronic conditions, pay more out-of-pocket than the insured, and often receive less care.[36]

Iowa is facing great challenges in healthcare expenditures at the state, corporate and individual level. In 2003 insurance premiums, nationally, rose 13.9%. On one hand, Iowa is rated 6th in the nation for healthcare quality (as related to meeting care standards in 24 quality indicators)[37], and the 7th for basic health care and access to health care. Yet, reimbursement rates are among the lowest in the nation.

Iowa's hospitals:

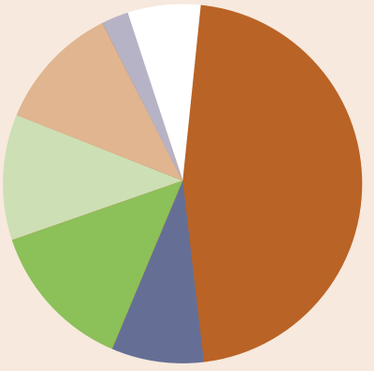
Iowa hospitals are paid 12.1% less per case than other midwestern states and 17% less per case than other hospitals nationwide.[38]

In 2003, Iowa hospitals operated at an average negative Patient Service Margin of (-$244) per patient stay. This was calculated in the following way:

Average hospital charge= $12,761
- uncompensated care of $5,625
The hospital collects $7136
- hospital costs $7360
- $244 [39]

Four percent of Iowa hospitals gross revenue ($345 million) went to uncompensated bad debt and charity care.[40]

Iowa Hospital Reimbursement, 2003



Iowa's healthcare costs for chronic diseases:

To better evaluate the impact of chronic diseases on Iowa's burdened health care system, one can examine the number of hospitalizations and costs due to chronic diseases, that comprised its top 30 Diagnostic Related Groups (DRG's) for 2003. (table 1)

As previously discussed, the NGA Chronic Care Team has targeted three chronic conditions that are particularly adaptable to disease management strategies. The 2003 costs of these conditions are listed in table 2:

Table 1: Chronic diseases within 30 top DRG's in Iowa (2003)

Description (Ranked in order of numbers of discharges)	Discharges	Billed Total Charges	Billed charges per patient	Average Length of Stay
Heart Failure (5)	8,525	$79,030,249.00	$9,270.41	4.49
Chronic Obstructive Pulmonary Disease (8)	5,810	$50,489,191.48	$8,690.05	4.31
Chest Pain (9)	5,431	$30,169,210.68	$5,555.00	1.61
Percutaneous Cardiovascular Procedures (14)	3,537	$85,766,951.07	$24,248.50	2.01
Circulatory Disorders with Acute MI (24)	2,415	$35,531,653.95	$14, 712.90	5.27
Circulatory Disorders with cath, without MI (25)	2,399	$28,491,709.33	$11,876.49	2.18
Renal Failure (27)	2,083	$28,877,948.55	$13,863.63	5.85
Bronchitis and Asthma Age 0-17 (28)	2,052	$9,044,950.59	$4,407.87	2.48
Percutaneous Cardiovascular Procedure with Stent (29)	2,040	$57,592,783.90	$28,231.76	1.73

Source: IHA Profiles, 2004

Table 2: 2003 inpatient and outpatient charges for Iowa's targeted chronic diseases

Disease	Medicare	Medicaid	Wellmark	Commercial	Self-Pay
Congestive Heart Failure	$117,675,167	$5,073,577	$8,376,159	$9,935,462	$2,855,153
Diabetes	$27,554,183	$5,406,683	$6,207,218	$8,427,071	$2,243,244
Asthma	$6,927,460	$4,872,658	$3,384,254	$6,116,387	$1,802,858

Source: IHA 2003 In-patient and out-patient discharge data

Iowa's Insurance portrait:

Insurance coverage for all Iowans: (as of March 2004)

- Total number: 2,921,000
- 88.7% have some form of health insurance-either private or government
- 11.3% are uninsured, which is the highest it has been since 1997.
- 79% have private health insurance,
- 65.2% are through health plans
- 8.0% are on Medicaid,
- 15.9% qualify for Medicare
- 2.7% have military insurance

Source: U.S Bureau of the Census, Housing, and Household Economic Statistics Division

Iowa's taxpayer: The health care consumer

At the corporate level, health care premium costs have been rising in double digits for the past several years. This results in less employee benefits, curtailing retiree benefits and increased employee contributions to premiums. With insurance rates rising at a rate that is five times the inflation rates, health care spending in 2003 continues to rise at the fastest rate in our history. Worker's average monthly contribution to premiums for family coverage have more than quadrupled, rising from $52 in 1988 to $222 in 2004.[41]

However, when worksite health promotion programs are instituted, a Johnson & Johnson study reports a $244.66 per employee per year reduction in medical care costs. [42]

Iowa, however, is a state of small business owners, where many are not part of a large company that can support worksite wellness. Fourteen percent of our employed citizens directly purchase their insurance, versus being part of an employer plan. The average premium for a family insurance policy represents 21% of the national median household income.[43]

Iowa's most vulnerable:

This could be examined in several ways.

- First, 11.3% of Iowans are currently uninsured. Nationally, in 1996, out-of-pocket expenses were highest for uninsured people under age 65 with chronic conditions. [44]
- Iowans on Medicaid are vulnerable, as they face a number of barriers in receiving and following through with health care treatment plans. As of May 2004, there were 286,000 eligibles.
- Thirty-three percent of Children with Special Health Care Needs[45] (CSHCN) were covered under Medicaid and 6% were uninsured.[46] 15.6% of the special needs children accounted for 42.1% of total medical care costs. The families of these children experiencing high out-of-pocket expenses were approximately 11 times more likely to be from households with incomes below 200% of the federal poverty level than to be from families with incomes at or above 400% of the federal poverty level.[47]
- Iowans with chronic conditions, particularly those on fixed or with low incomes, are vulnerable.

In 2003, Iowa's Medicaid expenses were as follows:

Long Term Care	**$1,004 Billion**
Intermediate Care Facilities for Mentally Retarded:	218 million (21.8%)
Mental Health Facilities:	24.2 million (2.4%)
Nursing Facilities:	487.5 million (48.6%)
Home Health and Personal Care	273.7 million (27.3%)
Acute Care:	**$1,138.5 Billion**
Inpatient	213.8 million (18.8%)
Physician, Lab & X-ray	90 million (7.9%)
Outpatient Services	111.9 million (9.8%)
Drug Prescriptions	269 million (23.6%)
Other Services	168.3 million (14.8%)
Payments to Medicare	94.9 million (8.3%)
Managed Care and Health Plans	190.5 million (16.7%)

Source: Urban Institute estimates based on CMS data (Form 64)

As the number of chronic conditions per individual increases, the amount of out-of-pocket expenses also increases. In 1996, an individual with no chronic conditions averaged $249 out of pocket, versus one condition at $433, two conditions at $733 and three or more at $1134. [48] Twenty percent of persons on Medicare have five chronic conditions. (Out-of-pocket expenses are most common for prescription medications in persons 65 and older.[49])

Seniors, on average, spend about $2,300 a year on legal drugs. The doubling of co-payments for prescription drugs results in a 10% to 12% reduction in use of medications for chronic disease conditions such as diabetes and hypertension. [50]

Children with Special Health Care Needs (CSHCN) also face increased health care expenditures. According to a recent National study, compared with other children, CSHCN have three times higher health care expenditures. They use five times the number of prescribed medications than other children, more than twice as many physician office visits and seven times as many non-physician visits. On average, the out-of-pocket expenses of these families are about twice those of other children. A small segment of the population of CSHCN had very high out-of-pocket expenses and was disproportionate to low-income families. [51]

Summary and Recommendations:

The above "Iowa Profile," creates a fertile background to justify the development of a statewide disease management program.
Rationale includes:

- Hospitals are facing poor reimbursement rates and operating margins, and a high number of hospitalizations due to chronic diseases (which are typically revenue losers).
- Primary care clinics are working to incorporate the Chronic Care Model, but with limited resources and both time and reimbursement constraints.
- Iowa's Medicaid program, serving 8 percent of Iowa's total population and within it, a significant portion of chronic disease populations, are also limited in resources, and face reimbursement constraints.
- Chronically ill patients face a disproportionate share of out-of-pocket costs for their health care and medications.
- CMS demonstration programs are currently testing population models as a possible option for offering increased patient quality and satisfaction, and can account for financial cost reduction outcomes of 5 percent or more in certain chronic diseases populations. The Centers for Medicare & Medicaid Services have recognized that the current health care system is neither well equipped nor reimbursed to care for those with chronic diseases. In launching the CCIP and CMHCB demonstrations, and pay-for-performance initiatives, they will challenge the system, either through the use of proprietary disease management companies or integrated health systems, to increase health care quality and patient satisfaction, while shaving health care costs. There is high expectation that phase I CCIP pilots may show positive results in as early as one year, thus allowing them to quickly move into "phase II- which calls for expansion of these models into additional locations.

Iowa can begin to address both reform efforts to increase quality and health care cost reduction in a number of ways. Suggestions include:

1. Forming an Iowa Leadership Council to guide the development of a statewide plan that addresses Iowa's unique chronic care issues.

2. Utilizing the support and resources of the NGA's Chronic Care Policy Academy to bring effective strategies, as developed by other states, into Iowa for rapid integration.

3. Partnering to build Iowa collaboratives, representative of healthcare providers, insurance companies, and government, to explore ways that Iowa can build on its capacity to deliver population strategies to care for patients with chronic diseases.

4. Determining if population disease management strategies can best be met by "building or buying" multi-disease programs.

5. Piloting of more aggressive population disease management programs that target vulnerable populations (ie. Medicaid and the uninsured) to develop our capacity to care for those with chronic care needs.

Iowa is an aging state that faces rising healthcare costs. For persons with chronic conditions of all ages, the last 15 percent of their lifespan is often characterized by disability and frequent hospitalizations. A major goal for chronic disease programs is to maximize wellness and to avoid illness exacerbations.

As Iowa leadership explores the opportunities for building Iowa's capacity to manage chronic conditions, there are many "lessons learned" from other states. Iowa has the opportunity to continue supporting the Chronic Care Model as it is spread throughout primary health care, to build in the preventative components in Iowa's guiding documents, such as Healthy Iowans 2010, and to offer trainings and educational support to encourage utilization of best practice guidelines.

Iowa has strength in health care organizations and collaboratives that are already supporting chronic care initiatives. While there are chronic care projects currently in operation, Iowa has no experience in delivering population disease management. Medicare, Medicaid, and uninsured populations are most likely to benefit from these programs. While private insurance companies, including Wellmark and John Deere, are incorporating pay-for-performance models to encourage better chronic care outcomes, government insurance is currently limited in this capacity.

Finally, there is great opportunity for all Iowans to become more engaged in their health care. Patients are becoming more savvy and comfortable in requesting (even demanding) information about their care, the potential risks, and their options. They are critically evaluating the quality of both physician and hospital care. The definition of health is no longer limited to the absence of disease, but engages individuals and communities to "create health" through active involvement in influencing and personally committing to behaviors and lifestyle changes that promote positive health. Consumers are ready to assume their role as partners in the reform efforts necessary to develop healthier individuals and communities.

Early Adopter Stories:

Mercy Clinics

The Mercy Clinics had incorporated portions of the clinical information component of the Chronic Care Model as early as 1998, but adopted the entire model in 2002.

"We are operating this model in four of our clinics, beginning with a focus on diabetic patients, and then expanding to those with hypertension," explains David Swieskowski, M.D., Vice President of Quality Improvement. "Each of our clinics is responsible for creating its own populated data base, and the work flow in caring for those patients is a little different in each setting."

Within each setting, there are clinic-tailored processes that relate to all six elements, such as decision support (standing orders and best practice guidelines), self-management support (as practiced through the 5 –A's of assess, assist, arrange, advise, agree), and making local community resources available to patients and families.

Dr. Swieskowski, in his administrative role, sends system level monthly reports to his physicians to provide feedback on pre-established clinical indicators. "It is important that our health care team knows how they are doing in terms of moving the indicators in positive directions, and how their office practice compares to their peers," states Dr. Swieskowski. As an added incentive, these clinics are part of a "Pay for Performance" pilot project of Wellmark Blue Cross Blue Shield. "We will be incented by Wellmark to keep our patient's HbA1c levels below 8," states Dr. Swieskowski.

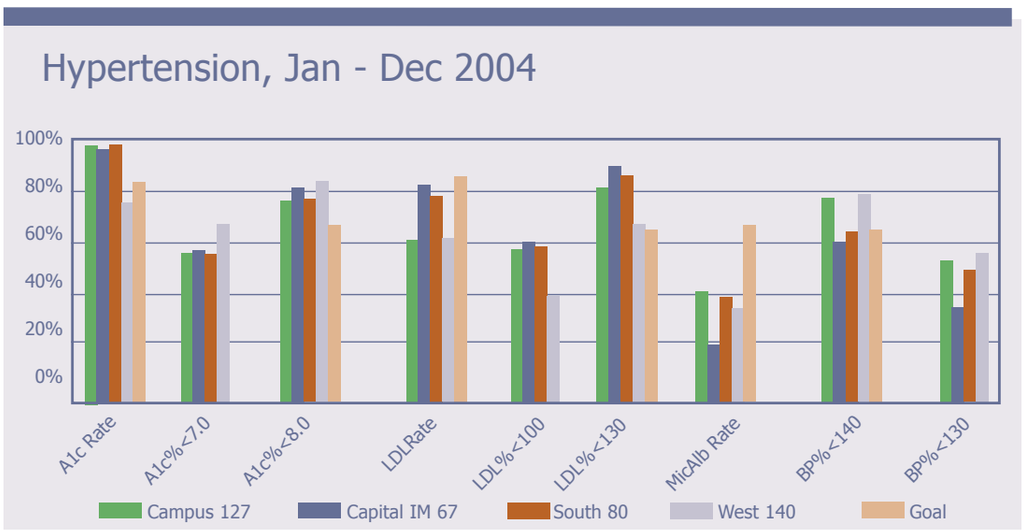
Outcomes for these clinics are very encouraging. The indicators measured include numbers of patients who complete yearly HbA1c labs and trending data on lab values.

When asked about barriers to implementing the Chronic Care Model, Dr. Swieskowski reported that the biggest challenge was "organizing the office" in a way that supported the components of the model. "We don't see that reimbursement is the biggest problem – although we are fortunate to have Wellmark's financial support for this project," he stated.

"We are operating this model in four of our clinics, beginning with a focus on diabetic patients, and then expanding to those with hypertension," David Swieskowski, M.D.,

Dr. Swieskowski also values using a team-based approach to supporting patient care. Each health professional, be it a nurse, dietitian, or other, has a skill set and keeps up their knowledge according to their specialty. This takes pressure off the physician to be "up to date" with best practices in all areas.

For more information, or to obtain samples of materials that Dr. Swieskowski has developed for these clinics, please email him at dswieskowski@mercydesmoines.org.



Early Adopter Stories:

Iowa Health Physicians Clinics

"Our chronic care initiative began in September of 2002, and centered around improving access for all patients including those with diabetes, so that they could receive health care in a more productive and timely manner," reports Dr. Mark Barnhill, Medical Director of the Iowa Health Physicians.

By incorporating the six elements of the Chronic Care Model, the Iowa Health Physicians Ankeny Clinic is better able to serve the comprehensive needs of their diabetic patients. They began with decreasing appointment scheduling delays by incorporating open access scheduling. This was accomplished by training the front office staff to make scheduling decisions rather than waiting for physician or nursing input, which often delayed the process by hours.

As a participant in the IMPACT group of the Institute for Healthcare Improvement (IHI), Dr. Barnhill was able to receive technical support for this project. He researched effective programs in other states, and adopted a model similar to the one used in the Institute for Health care Improvement's "Redesigning Office Practice."

- Ordering labs ahead of appointments to allow discussion of the results at the appointment
- Making staff aware of referral opportunities – such as Diabetes Education Classes
- Hosting regular self-management support groups that facilitated patients setting individual goals, and office staff making follow-up calls within two weeks
- Increasing the patient's awareness of community support programs such as "Lighten up Iowa" and the supermarket tours by Hy-Vee registered dietitians.

Outcomes for this two-year old project included: patients being more compliant in following through with labs and preventative health appointments, and a steady decline in their entire diabetic population's HbA1c levels. While the above changes were phased in over 8 months, the HbA1c levels showed a consistent decline from 7.9 to a plateau of 7.20. (The desired goal is to keep these levels below 8.) An external health economist evaluated this project and found it to be "cost neutral." The project required no additional staffing, and the entire office was energized by their expanded roles in serving the patients. There was a noted spirit about process improvement measures, and even ancillary staff was engaged in quality improvement measures.

By incorporating the six elements of the Chronic Care Model, the Iowa Health Physicians Ankeny Clinic is better able to serve the comprehensive needs of their diabetic patients.

In addition to open access scheduling, the Ankeny Clinic made several other infrastructure changes that not only resulted in more efficient "throughput" for patients, but also made the visit more productive. They customized the chronic care model for their setting by:

- Developing a diabetic patient registry and linking preventative appointment and lab work reminders to alert staff for when patients need follow-up (especially those with elevated HbA1c results)
- Adopting American Diabetes Association (ADA) standards as their best practice guidelines
- Placing these guidelines, as well as diabetic flow sheets on the patient chart, so that no matter the presenting symptoms, the patient would always receive evidence-based follow-up for their diabetes
- Determining individual health literacy needs to better engaging them as a healthcare partner. Teaching patients to understand the rationale for following HbA1c levels.

"The toughest part, for us, was facilitating the self-management group sessions," states Dr. Barnhill. "It is time-intensive, and requires flexibility on the staff's part to address patient needs. But the patient participation was always high. It was a good use of our time."

As part of the overall expansion plan, the Ankeny Clinic is building these strategies into their care for patients with hypertension, depression, elevated lipids, and for children with asthma. In addition, they are expanding this model into 7 additional clinics.

"We need to change the way that we deliver care", states Dr. Barnhill. "The majority of our patients will benefit from using the chronic care model, and it is as motivational to the staff as it is to the patients."

For more information, contact Dr. Barnhill at 515-471-9200.

Early Adopter Stories:

The Iowa Chronic Care Consortium: Mercy CHF Telemanagement Demonstration Project

The Iowa Chronic Care Consortium (ICCC), organized in 2000, is a collaboration of public, private, academic, and governmental participants coordinated by Des Moines University. The Consortium's primary goal is to improve the health and productivity for all Iowans through access to proactive chronic care strategies that are regular, routine and reimbursed.

Since its inception, the Consortium has deployed chronic care demonstration projects in 14 locations throughout Iowa. These programs have targeted patients with diabetes and congestive heart failure (CHF). While a variety of care management models are utilized, all projects are evaluated on four parameters: 1) patient satisfaction, 2) patient functionality, 3) clinical improvement, and 4) cost reduction.

One of the most successful projects is Mercy Health Network's Congestive Heart Failure Case Management Program. Initiated in 2000, this program has been expanded from one to ten sites within four years. Patients eligible for the program include those with a diagnosis of CHF who have been re-hospitalized more than one time within a six-month period. Through October 2004, 569 patients have been served in 10 rural and urban sites.

This project involves combining experienced cardiovascular nurses with a telemanagement system called Tel-Assurance TM, as designed by Pharos Innovations, LLC. By simply making a daily phone call to the pre-recorded Tel-Assurance data system, enrolled patients self-report symptoms and weight that may signal early warning signs of worsening heart failure. The nurse case managers review the patient's responses via Pharos Innovations website each day, and respond to variances (abnormal readings). Through pre-established protocols, they are able to guide patients in managing their symptoms, or refer them to their physicians before an ER visit or hospitalization required.

Outcomes of this case management program have been encouraging:

- Patients enrolled in the Mercy CHF program have shown high levels of adherence to making the daily phone call.
- Patient satisfaction scores are very high (greater than 4.5 out of a 5 point scale)
- Patient functionality has improved (as measured by the Minnesota Living with Heart Failure Survey)

The Consortium's primary goal is to improve the health and productivity for all Iowans through access to proactive chronic care strategies that are regular, routine and reimbursed.

- Re-hospitalization rates for one year have decreased an average of 86.3% (as measured per patient and comparing each patient's pre-and post- participation hospitalization rates).
- For the 244 patients who were enrolled in 2003, it is estimated that 210 hospitalizations were avoided. Utilizing 2003 Iowa Hospital Discharge data to determine the payer mix, it is estimated that this program saved a total of $1,015, 050 in health care expenses, with a minimum of $27,800 savings directly to patients.

A key to this program's success is an "opt-in" approach, i.e., all patients are voluntarily "recruited" through established relationships with health care providers and are willing to participate. This approach is often used to identify and manage high-cost, high- risk patients.

The Mercy CHF Case Management demonstration project is being supported through HRSA, Office for the Advancement of TeleHealth funds, with matches through the State of Iowa, Mercy Health Network and the Iowa Chronic Care Consortium.

To obtain the complete Mercy CHF report, please contact Bill Appelgate, ICCC Executive Director, at william.appelgate@dmu.edu., or David Hickman , Director of Clinical Integration at Mercy Health System, at hickmand@mercyhealth.com.

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Web Sites:

Centers for Disease Control and Prevention: www.cdc.gov

Centers for Medicare & Medicaid Services: www.cms.gov

Disease Management Association of America: www.dmaa.org

Health Disparities Collaboratives: (focuses on five chronic disease collaboratives) www.healthdisparities.net

Iowa Department of Public Health: www.idph.state.ia.us

Institute for Healthcare Improvement: www.ihi.org

National Chronic Care Consortium: www. nccconline.org

National Coalition on Health Care: www.nchc.org

Rand Health: www.rand.org

The Chronic Care Model: www.improvingchroniccare.org

Additional Recommended References and web sites:

Action for Healthy Kids: www.actionforhealthykids.org

The Guide to Community Preventive Services, 2004 update: www.thecommunityguide.org

National Governor's Association & NGA Center for Best Practices: www.NGA.org/center

National Guideline's Clearinghouse: www.guidelines.gov

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Colorado High Risk Health Plan: www.naschip.org/CoverColorado%20PR%20FINAL.pdf

Colorado Medicaid Program for Asthma: www.nationaljewish.org/news/medicaid_co_results.html.

Florida Disease Management Program: www.fdhc.state.fl.us/Medicaid/Disease_Management/index.shtml.

Indiana Chronic Disease Management Program: www.indianacdmprogram.com

Missouri State Medicaid Disease State Management Program: www.dss.mo.gov/dms/pages/modsm.pdf

North Carolina Diabetes and Cardiovascular Collaborative: www.ncdiabetes.org/whatwedo

Vermont's Chronic Care Initiative-Living Well with Chronic Disease www.vdh.state.vt.us

Washington State Collaborative: www.doh.wa.gov/cfh/WSC/default.htm

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Iowa Department of Public Health

Promoting and protecting the health of Iowans